THE SECOND RECORD OF THE GIANT SEADEVIL, *CERATIAS HOLBOLLI*, FROM CALIFORNIA, WITH NOTES ON ITS LIFE HISTORY

Based upon some badly mangled remains found in the stomach of a sperm whale, *Physeter catodon*, which had been harpooned during November 1970 about 115 km west of San Francisco, Rice (Bull. So. California Acad. Sci., 91:158, 1972) reported the first occurrence of the giant seadevil, *Ceratias holbolli*, from Californian waters. Fourteen months after the first specimen was found a second individual (Fig. 1) was captured in an otter trawl which was being fished on the bottom in 293 to 375 m from lat. 41°23.8'N long. 124°29.9'W to lat. 41°22.2'N long. 124°30.3'W (near Redding Rock off the mouth of Redwood Creek, Humboldt Co., California). Emery Wilson, skipper of the trawler *Mineo Bros.*, informed me that during the tow which yielded the giant seadevil, the net dropped into the head of a submarine canyon and undoubtedly fished deeper than the 200 fms. (375 m) registered by his fathometer.

This seadevil, a female 525 mm SL (700 mm TL) and weighing 4990 g, was netted on 11 January 1972. It had a parasitic male 37 mm SL attached to the midline of the belly at a point approximately one head length in advance of the anal fin. Although the illicium was missing on the female, it did not appear to have been broken off during capture or subsequent handling. The loss of its illicium could have affected its feeding behavior in that it no longer could lure prey species within easy "striking" distance, and thus would be forced to seek out food items not normally utilized. Unfortunately, I was unable to find any accounts of stomach contents for *Ceratias holbolli*, so I could not compare the items found in the specimen at hand with those reported for "normal" individuals. The stomach of the Redding Rock seadevil contained one slightly digested short-spine thornyhead, *Sebastolobus alascanus*, 117 mm SL; the head end including beaks of an unidentified squid; a 25 mm long basal fragment from the arm of a starfish, *Petalaster foliolata*; and a parasitic tapeworm. The squid beaks were compared with those from *Loligo opalescens*, *Rossia pacifica*, and *Moroteuthis robusta*, three of the most abundantly taken squid in that area, but they did not match any of these.

In an effort to obtain additional life-history data, I removed the otoliths from the female as well as the parasitic male, and examined them for indications of age. Those from the female had six excellent hyaline growth zones, whereas no annuli could be distinguished on the microscopic sagittae from the male. The smallest female with a male attached appears to be a 460 mm SL specimen reported by Abe (Proc. Japan Acad., 43:797–800, 1967) from the coast of Japan; the male was only 32 mm TL, which also appears to be a record for smallness. Since the Japanese specimen probably represents minimum size at maturity, and since the six hyaline zones on the otoliths of the Redding Rock seadevil very likely are true annuli, it is reasonable to assume that the female *Ceratias holbolli* does not reach maturity until an age of five years, at least.

I wish to thank the skipper of the trawler *Mineo Bros.*, Emery Wilson, for saving the giant seadevil and turning it over to Lawrence F. Quirollo, California Department of Fish and Game, Eureka, who took special pains to see that it was properly preserved. Jack W. Schott, California Department of Fish and Game, Long Beach, took the photograph which appears as Figure 1. The Redding Rock seadevil has been deposited in the fish collection of the Natural History Museum of Los Angeles County (LACM 33718–1).

JOHN E. FITCH, *California Department of Fish and Game, 350 Golden Shore, Long Beach, California 90802.*

Accepted for publication September 26, 1973.

Figure 1. Female *Ceratias holbolli*, 525 mm SL, with attached parasitic male, 37 mm SL, trawled near Redding Rock, California, on 11 January 1972. The large gelatinous mass with a dark center which appears immediately in front of the anal fin is extruded ovarian tissue.

CHROMOSOMES AND THE STATUS OF *RHAMPHOLEON MARSHALLI* BOULENGER (SAURIA: CHAMAELEONIDAE)

Recently, Broadley (Arnoldia, 5:1–6, 1971) recommended that the chameleon species *marshalli* be transferred from the genus *Chamaeleo* to *Rhampholeon*. The bases for this recommendation were the similarities in hemipenial, cranial and external mor-

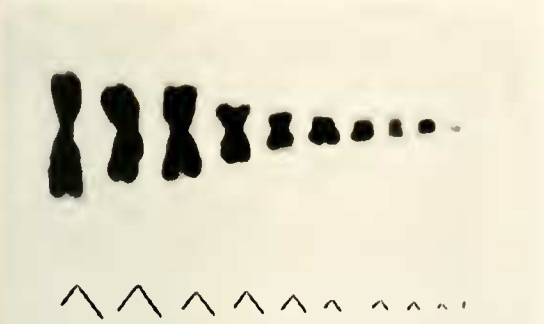

Figure 1. Photomicrograph of haploid complement of mitotic metaphase chromosomes of *Rhampholeon marshalli* (LACM 76768, female), above (longest chromosome = 7.5 micra); and an idiogramatic representation of a haploid complement of chromosomes of *R. spectrum* (drawn from Matthey and Van Brink, 1960), below.

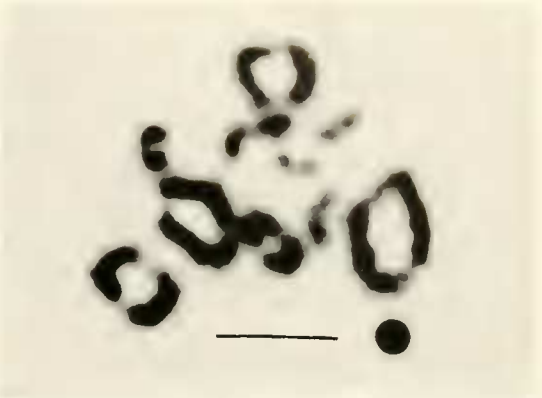

Figure 2. Photomicrograph of diakinetic chromosomes of *Rhampholeon spectrum* (LACM 76767, male) illustrating 10 bivalent figures (line represents 10 micra).

phological characteristics between *R. marshalli* and *R. platyceps* Gunther. We present here an analysis of the chromosomes of *R. marshalli* which also suggests that the affinities of *marshalli* lie with *Rhampholeon* rather than *Chamaeleo*.

Matthey and Van Brink (Bull. Soc. vaudoise Sci. Nat., 67:333–348, 1960) presented chromosomal data for 27 of the 69 species of chameleons recognized by Hillenius (Beaufortia, 8:1–92, 1959). Among the species analyzed was *R. spectrum*, the type species of *Rhampholeon*. The diploid chromosome numbers for the entire group ranged from 36 (12 macrochromosomes and 24 microchromosomes) down to 20 (18 macrochromosomes and 2 microchromosomes). *Rhampholeon spectrum* was unique within the group in having 20 chromosomes. Species with the most similar chromosome numbers and morphologies to *R. spectrum* (22 to 24 chromosomes with no to 4 microchromosomes) are restricted in distribution to Madagascar.

We analyzed chromosomes prepared by a colchicine-hypotonic citrate technique (see Lowe, Wright, and Cole, Mamm. Chromos. Newsletter, 22:201–203, 1966) from bone marrow, spleen, intestine and/or testes of four specimens of *R. marshalli* (LACM 76767–70, 1 male, 3 females) from Bunga Forest, Vumba Mountain, Rhodesia. Based on our analysis, the chromosomes of *R. marshalli* (Figs. 1 and 2) are similar to those reported for *R. spectrum* by Matthey and Van Brink (1960). The karyotype consists of the following: nine pairs of biarmed chromosomes (metacentric and submetacentric) with no distinct break or division into size classes and one pair of acrocentric chromosomes, the smallest of the series, for a total of 20 chromosomes and 38 chromosome arms, with no distinguishable sex chromosomes. The only apparent differences between the karyotypes of *R. marshalli* and *R. spectrum* lie in chromosome pairs 2 and 3 (from left to right in Fig. 1). These two pairs in *R. marshalli* are more even in size and slightly more metacentric than those of *R. spectrum*.

The overall similarity of the karyotypes of *R. marshalli* and *R. spectrum* and the apparent uniqueness of this condition (both number and morphology) in chameleons is interpreted as additional evidence of the affinities of *marshalli* with *Rhampholeon*.

JOHN W. WRIGHT, *Section of Herpetology, Natural History Museum of Los Angeles County, Los Angeles, California 90007*, and DONALD G. BROADLEY, *Keeper of Herpetology, National Museums and Monuments of Rhodesia (Umtali Museum), Umtali, Rhodesia.*

Accepted for publication October 1, 1973.

TWO ADDITIONAL RECORDS OF *TADARIDA MACROTIS* AND *EUDERMA MACULATUM* FROM SAN DIEGO, CALIFORNIA

One adult male of *Tadarida macrotis* was captured on 7 October 1970 in the bathroom of a second story apartment in Mission Beach, San Diego, California. The bat apparently entered through an open window during the night and was found the following morning crawling down the bathtub drain. The specimen was taken to the University of San Diego where it was identified as *T. macrotis*. External measurements of this individual were